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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,564	09/28/2001	Toshiaki Otsuki	392.1726	2579

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EXAMINER

HARTMAN JR, RONALD D

ART UNIT	PAPER NUMBER
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2121

DATE MAILED: 05/07/2003

4

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/964,564

Applicant(s)

OTSUKI ET AL.

Examiner

Ronald D Hartman Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-5 are presented for examination.

Drawings

2. Figures 2 and 5 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claim 5 is objected to because of the following informalities: line 10 and line 18, should be either, "for each said axis," or "for a particular axis" or "an axis". There are 3 other instances in this claim.

Furthermore, with regards to claim 5, 4th paragraph, line 6, should read, "to a speed along an axis obtained" and in the last paragraph, line 2, should read "movement along an axis" since it does not appear that the axis is what is intended to be moving.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

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The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 3 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Specifically, this claim recites, "deceleration processing being accomplished through use of fixed acceleration". The examiner is unsure as to what is meant by this limitation as it is unclear how a deceleration is to take place using an acceleration force. Nowhere in the specification had the fixed acceleration, with regards to deceleration, been discussed with any relevance over what is present in the claims. Therefore, the examiner has interpreted this limitation to simply suggest that during deceleration, there exists a period wherein the deceleration is constant or "fixed" in the acceleration curve.

5. Claims 4/1, 4/2 and 4/3 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Specifically claims 4/1, 4/2 and 4/3 claim "filtering" but do not describe what type of filtering is being used and or how the filtering is used. Therefore, since no reasonable interpretation of this claim can be made, unlike claim 3, this claim will not be treated on its merits.

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6. Claim 5 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Specifically, claim 5

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4/1, 4/2 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 4/1 and 4/2 recite "the fixed acceleration". There is insufficient antecedent basis for this limitation in the claim.

Claim 5 recites "the amount of movement" in the last paragraph. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United

States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Hong, U.S Patent No. 6,278,253 having an effective filing date of 8/2/1999.

As per claim 1, Hong teaches teaches a method for acceleration and deceleration control for supplying a movement command, which has been subjected to acceleration and deceleration processing, to a servo control section (Figure 3); wherein

- acceleration in the acceleration processing is determined so that a speed acceleration curve of the movement command is determined (This is the scope of what is being claimed by this limitation, as the use of "may" renders the limitation indefinite, and therefore when viewed in the broadest reasonable sense, its interpretation to include a situation where the limitation does not exist is presented)(Figures 1a,1a',1c and 1c' and C1 L20-63); and
- the speed acceleration curve is set for each axis and is dependent on acceleration or deceleration (inherent to Hong's disclosed system and its ability to control movement, through acceleration and deceleration processing, of the robot in at least one direction).

8. As per claim 2, a speed acceleration curve for each direction is inherent to Hong's disclosed system and its ability to control movement, through acceleration and deceleration processing, of the robot in at least one direction.

9. As per claim 3, Hong teaches acceleration/deceleration control using an acceleration/deceleration curve (C1 L21-64) and also teaches a situation wherein there exists a period wherein the deceleration is constant or "fixed" in the acceleration curve (Figure 9b, between .1 and -.2).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hong, U.S Patent No. 6,278,253 having an effective filing date of 8/2/1999.

As per claim 5, Hong teaches an acceleration/deceleration control system comprising:

- a memory (C1 L55-67);
- an acceleration-deceleration determination means for determining if an acceleration operation (AO) should be performed (taught as the ability of Hong's disclosed system to control the acceleration based on a determined path profile, C1 L20-32);
- a speed determination means for determining speeds in the present processing period by retrieving an acceleration corresponding to the speed along an axis in a previous cycle for use in determining a speed in

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the present cycle (taught as the ability of Hong's disclosed system to use a position change amount, C7 L50-61); and

- an output means for finding data on the amount of movement along an axis using the determined speed (DS) and then sending the data to a servo control system (Figure 2 elements 7, C1 L20-32),

As per claim 5, Hong does not specifically teach a memory for storing a table having, for each control axis, the relationship between accelerations and restricted accelerations or specifically the relationship between decelerations and restricted declarations, these omissions are believed to be obvious variations of the disclosed system of Hong. That is, since the "restricted acceleration" and "restricted deceleration" appear to merely provide for thresholds or limits that are reasonably ascertainable by the system (with the affects of gravity and friction) and since there is no real clear difference between the acceleration and the restricted acceleration (in the claims), the examiner may interpret these limitations to mean Hong's disclosed teachings of the use of an acceleration curve for controlling acceleration and deceleration. That is, as the robot is moving in a direction, through aid of the disclosed acceleration/deceleration processing, the current acceleration may be viewed simply to be the acceleration while the "ideal" or "theoretical" acceleration that is represented by the outputted acceleration curve comprises the "restricted" aspects of acceleration, as the acceleration should be controlled in a way that optimizes the movement of the acceleration along the acceleration curve.

Furthermore, a table is believed to be an obvious variation of the acceleration curves, as it merely provides a "point by point" analysis of the acceleration curve so that at individual times, the specific acceleration can easily be ascertained and controlled. Therefore, since a table merely serves to offer a more specific way of detailing with the time sensitive acceleration information contained in an acceleration curve, and does not change or affect the overall aspects or operations of the system as a whole, and since extrapolation from a curve to "order pairs" of time data is well known, the incorporation of a table is believed to be an obvious variation of Hongs disclosed system and his incorporation of using an acceleration curve and points on it for determining how a robot is to be controlled, via appropriate acceleration and deceleration control.

Furthermore, the applicant has claimed "for each axis" and since Hong clearly teaches his invention for robot movement control, Hong teaches this limitation inherently through his teachings of controlling the robot in at least one direction (see rejection of claims 2-3).

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald D. Hartman Jr. whose telephone number is (703) 308-7001. The examiner can normally be reached Monday-Friday, 11:30 am – 8:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee, can be reached at (703) 305-8498. The fax number for this examiner is (703) 746-5408.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-9618.

Any response to this action should be mailed to:

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Commissioner of Patents and Trademarks
Washington, D.C. 20231

Or faxed to:

(703) 746-7239, (for formal communications intended for entry)

Or:

(703) 746-7240, (for informal or draft communications, please label
"PROPOSED" or "DRAFT")

Hand delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor
(Receptionist).

Ronald D. Hartman Jr.
Patent Examiner
Art Unit 2121
April 30, 2003

Wilbert L. Starks, Jr.
Primary Examiner
Art Unit - 2121

A handwritten signature in black ink, appearing to read "Wilbert L. Starks, Jr.", written in a cursive style.